

ARCHAEOLOGY OF TRANTS, MONTSERRAT. PART 5.
PREHISTORIC AVIFAUNAKELLEY R. REIS¹DAVID W. STEADMAN²

ABSTRACT

We report identifications of 225 bird bones from the Trants site, Montserrat, Lesser Antilles. The site was occupied by Saladoid peoples from ca. 500 BC to AD 400. The prehistoric bird assemblage represents 11 species and is dominated by pigeons, doves, and large passerines that probably were used as food by Saladoid peoples. The species of columbid found most commonly at Trants today (*Zenaida aurita*, characteristic of second-growth forest and edges) is uncommon in the bone assemblage, whereas bones of two other columbids not found at the site today (*Columba squamosa* and *Geotrygonmystacea*, both forest dwellers) are common. This suggests more forested conditions near Trants when Saladoid peoples occupied the site. Three species of birds recorded from Trants (*Puffinus lherminieri*, *Porphyrio martinicus*, *Amazona* sp.) no longer occur on Montserrat. As on other West Indian islands, the avifauna of Montserrat has lost species to anthropogenic habitat destruction and predation by humans and introduced species. Catastrophic volcanic activity since 1995 has destroyed or degraded much of Montserrat's terrestrial ecosystems, undoubtedly with additional major negative impacts on the avifauna.

KEY WORDS: Montserrat, Saladoid, zooarchaeology, bird, human impact, faunal change

INTRODUCTION

Montserrat is a small (102 km²), mountainous, volcanic island in the Lesser Antilles between 16°40' and 16°49' N latitude and 62°09' and 62°15' W longitude (Fig. 1). The nearest major islands are Antigua (43 km NE) and Guadeloupe (64 km SE). Montserrat is made up of seven coalesced volcanoes, three of which dominate the landscape; Silver Hill (north), Centre Hills (central), and Soufrière Hills (south). The rocky soils consist of protosols, young soils, latosolics, and smectoid clays (Lang, 1967). The youthful volcanic landscape of Montserrat has "few mangrove swamps, no significant estuaries, and limited sandy beaches" (Steadman et al., 1984b). Instead, rocky cliffs line the coast around most of the island. Steep inland ravines (called "ghauts") have been formed by streams through radial drainage from the volcanic mountains.

Large portions of the mountain slopes on Montserrat were cultivated by Europeans from the 17th to 19th centuries (Beard, 1949; Fergus, 1994). The high elevations of Soufrière and Centre hills had been dominated this century by secondary rainforest until the latest round of large-scale volcanic activity that began on 18 July 1995 (Montserrat Volcano Observatory Team, 1997). This activity, centered at Chance Peak in Soufrière Hills, continues in early 1998 and has destroyed or damaged most of Montserrat's forests.

Trants, a Saladoid occupation site on the eastern (windward) side of Montserrat, is the largest pre-Columbian site on the island (Watters, 1994). It is near sea level

¹ Department of Zoology, University of Florida, Gainesville, Florida 32611, USA. kreis@zoo.ufl.edu

² Florida Museum of Natural History, University of Florida, Gainesville, Florida 32611, USA. steadman@flmnh.ufl.edu

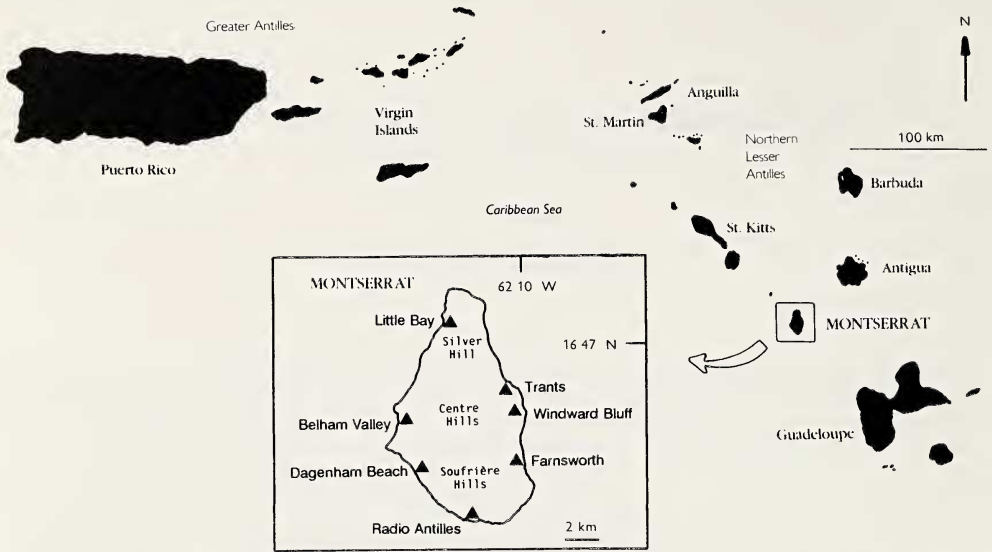


Fig. 1.—Islands of the West Indies, their relationship to Montserrat, and the location of Trants archaeological site (MS-G1). Two localities mentioned in the text are not depicted for lack of space. Chances Peak is a high peak in the Soufrière Hills. Galway's Estate is on the southwest slope of Chances Peak, 1 km from the ocean.

and occupies relatively flat terrain between the formerly forested slopes of Soufrière and Centre hills (to the west and north, respectively) and the Atlantic coast to the east (Fig. 1). The total area of Trants (ca. 600,000 m²) is dominated today by pastures, garden plots, and an airstrip (Watters, 1994; Petersen, 1996).

The Saladoid people originated in South America and dispersed nearly throughout the West Indies, settling in Montserrat ca. 500 BC (Rouse; 1992; Keegan, 1994; Watters, 1994; Petersen, 1996). They produced a distinctive white-on-red (WOR) painted and zone-incised-crosshatched (ZIC) ceramic ware that has been excavated from many archaeological sites in the West Indies (Petersen and Watters, 1991; Siegel, 1991; Watters, 1994; Petersen, 1996). The Saladoid people were horticulturists who raised drought-resistant root crops that supplied little or no protein to their diet (Wing, 1989). They also exploited a variety of marine and terrestrial animals. The many thousands of bones from Saladoid sites on Montserrat and elsewhere suggest that these people had a dramatic effect on populations of terrestrial vertebrates, especially birds and rodents (Steadman et al., 1984b; Pregill et al., 1994; Reitz, 1994).

MATERIALS AND METHODS

D. R. Watters and J. B. Petersen excavated the Trants site (MS-G1) in 1979 and 1990 (Petersen and Watters, 1991; Watters, 1994; Petersen, 1996). The bones excavated in 1979 were reported by Steadman et al. (1984b). The vertebrate remains and their corresponding data (taxon, element, length measurement, provenience number, and stratum) from the 1990 excavations were described by Reitz (1994). The bird bones analyzed herein were excavated in 1990 from three 1 × 1-m excavation units within the site's core area: N396E571, N421/22E645, and N596E571. Each unit consisted of four quadrants: samples from quadrants

1–3 were screened through ¼-in mesh and those from quadrant 4 were screened through ½-in mesh. The ½-in mesh yielded twice as many bones as were recovered using ¼-in mesh, although the minimum number of individuals (MNI) recovered from both mesh sizes was similar (Reitz, 1994).

Excavation units were divided into four strata that were removed in 10-cm increments. Stratum A represents a mixture of historic and prehistoric artifacts and included post-Columbian species (*Rattus* sp.). Strata B and C were deposited ca. AD 0–200 and 500–0 BC, respectively; they represent the Saladoid occupation of Trants (Petersen, 1996). Bone samples from Stratum D are so limited that they are included with those from Stratum C. All four strata were depicted by Pregill et al. (1994:fig. 10) and in greater detail by Petersen (1996:fig. 5–9).

Our identifications are based on comparisons with modern bird skeletons from the Florida Museum of Natural History, University of Florida (UF) and the United States National Museum of Natural History, Smithsonian Institution (USNM). Our evaluations of the modern status of birds on Montserrat are based upon Steadman's collections and observations during 24–30 January 1983, supplemented by Danforth (1939), Bond (1956), and Evans (1990). Sadly, the modern avifauna of Montserrat had not been surveyed adequately before the major volcanic activity began in 1995. Some of our inferences on the habitat preferences of landbirds are based in part on the more thoroughly surveyed avifauna of St. Kitts, a nearby volcanic island with fairly similar habitats (Steadman et al., 1997).

RESULTS

General Collections

Columbids (pigeons and doves) and large passerines (mostly thrashers and thrushes) dominate the prehistoric avifauna from Trants (Table 1). Of the 225 bones we identified, 121 (54%) represent columbids and 82 (36%) represent large passerines. Of the 95 bones identified from the 1979 excavations, 79% are columbids and 16% are large passerines. The largest species of columbid, *Columba squamosa*, is the most common species in Stratum C/D, whereas the medium-sized columbid, *Geotrygon mystacea*, is the most common species in Strata A and B. Among the passerines, two species of thrashers (*Margarops fuscus*, *M. fuscatus*) far outnumber all other taxa. Only a single species of seabird (*Puffinus lherminieri*) and only two aquatic species (*Gallinula chloropus*, *Porphyrio martinicus*) are represented.

The columbids and large passerines that dominate the Trants bird assemblage are granivores or frugivores that are very palatable to humans. All of the bird bones from Trants are associated with Saladoid artifacts and cultural features, indicating that they probably were used as food. Approximately 20% of the bones show signs of burning. The element representation and breakage patterns in the bone assemblage are typical of those for landbirds from prehistoric cultural contexts on oceanic islands (Steadman et al., 1990).

Taxonomic Accounts

Order Procellariiformes

Family Procellariidae

Puffinus lherminieri (Audubon's Shearwater)

Material.—Stratum B: unit N596E571—mandible.

Comments.—No populations of *Puffinus lherminieri* are known to breed on

Table 1.—Bird bones identified from the excavations conducted in 1990 at the Trants site, Montserrat. Numbers represent the number of identified specimens (NISP). Stratum A contained a mixture of prehistoric and historic artifacts. Strata B and C/D represent Saladoid occupation. "1979 total" is the bones identified by Steadman et al. (1984b) from the excavations conducted in 1979. †, species no longer occurs on Montserrat. *, taxa not necessarily different from others listed more specifically; such taxa are not included in "Total species."

Species	Stratum			NISP	
	A	B	C/D	1990 total	1979 total
† <i>Puffinus lherminieri</i>	—	1	—	1	—
<i>Gallinula chloropus</i>	—	—	—	—	4
† <i>Porphyrio martinicus</i>	—	1	1	2	—
<i>Columba squamosa</i>	5	2	28	35	12
<i>Zenaida aurita</i>	4	2	3	9	9
<i>Columbina passerina</i>	—	—	—	—	1
<i>Geotrygon mystacea</i>	22	24	17	63	28
*Columbidae sp.	4	4	6	14	25
† <i>Amazona</i> sp.	—	—	1	1	—
<i>Margarops fuscus</i>	5	6	14	25	6
<i>Margarops fuscatus</i>	2	10	26	38	8
<i>Cinlocerthia ruficauda</i>	—	4	1	5	1
<i>Cichlherminia lherminieri</i>	1	—	4	5	—
*Mimidae/Turdidae sp.	1	4	4	9	—
<i>Icterus oberi</i>	—	2	—	2	—
*Passeriformes sp.	3	5	6	14	1
Total bones	47	65	111	223	95
Total species	6	9	9	11	8

Montserrat or nearby islands today. The nearest sighting of *P. lherminieri* at sea was near Redonda in 1931 (Danforth, 1939). This seabird nests in burrows in soil or in crevices. Predation at the nests by humans and introduced mammals (cats and rats) and habitat destruction have depleted or eliminated populations of this small shearwater on many islands in the tropical Pacific (Steadman et al., 1990; Steadman and Pahlavan, 1992), and the West Indian islands of Anguilla, Antigua, Barbados, Barbuda, and Grenada (Brodkorb, 1963; Steadman et al., 1984a; Watters et al., 1984; Pregill et al., 1994).

Order Gruiformes

Family Rallidae

Porphyrio (Porphyryla) martinicus (Purple Gallinule)

Material.—Stratum B: unit N596E571—sternum. Stratum C/D: unit N396E571—humerus.

Comments.—*Porphyrio martinicus* occurs locally on most islands in the Greater Antilles but is only a stray in the Lesser Antilles except for a possible resident population on Guadeloupe (Bond, 1974; Evans, 1990). It typically inhabits shrubby wetlands but can wander from these areas. We are aware of no previous records from Montserrat. *Porphyrio martinicus* has been recorded as well from archaeological sites on Antigua, Barbados, Martinique, and St. Kitts (Steadman et al., 1984a; Watters et al., 1984; Pregill et al., 1994). None of these islands currently sustains populations of *P. martinicus*. Use of the genus *Porphyrio* rather than *Porphyryla* follows Steadman (1988).

Order Columbiformes

Family Columbidae

The identification of bones of West Indian columbids is difficult, with size often being the only potentially diagnostic feature in many skeletal elements (Olson and Hilgartner, 1982; Steadman et al., 1984*b*). The West Indian species of *Geotrygon* and *Zenaida* are often similar in size. Species of *Columba* and *Columbina* tend to be markedly large and small, respectively, making them more easily identified. Six species of columbids are reported to occur in modern times on Montserrat or nearby Lesser Antillean islands. They are, in descending order of size, *Columba squamosa*, *C. leucocephala*, *Geotrygon mystacea*, *Zenaida aurita*, *G. montana*, and *Columbina passerina*. *Columba leucocephala* has been recorded on Montserrat only through sight records by Bond (1961) and Steadman et al. (1984*b*); it may not have a resident population there today. *Geotrygon montana* occurs on nearby Antigua and Guadeloupe, but not on Montserrat.

Columba squamosa (Scaly-necked Pigeon)

Material.—Stratum A: unit N396E571—femur; unit N421/22E645—carpometacarpus, pedal phalanx; unit N596E571—coracoid, pedal phalanx. Stratum B: unit N596E571—sternum, coracoid. Stratum C/D: unit N421/22E645—four coracoids, two scapulae, three humeri, five ulnae, four radii, four carpometacarpi, two femora, three tibiotarsi, tarsometatarsus.

Comments.—*Columba squamosa* is more commonly found in humid forests but may also occur in drier, wooded lowlands. This species is not found at Trants today but occurred on forested slopes above the site before the recent volcanic activity. Steadman et al. (1984*b*) reported that *C. squamosa* was also common in January 1983 in the forested ghauts on Montserrat. *Columba squamosa* has been recorded as well from archaeological and paleontological sites on Puerto Rico, Antigua, Barbuda, Martinique, and St. Eustatius (Wetmore, 1952; Brodkorb, 1971; Steadman et al., 1984*b*; Pregill et al., 1994; Maíz, 1996). Especially relative to *Geotrygon mystacea*, the bones of *C. squamosa* are much more common in Stratum C/D than in strata A or B. This may suggest a preference for, and over-exploitation of, *C. squamosa* early in the cultural sequence at Trants. Being large and frugivorous probably added to the desirability and palatability of *C. squamosa*.

Zenaida aurita (Zenaida Dove)

Material.—Stratum A: unit N421/22E645—two humeri; unit N596E571—coracoid, tibiotarsus. Stratum B: unit N596E571—two scapulae. Stratum C/D: unit N396E571—humerus; unit N421/22E645—coracoid, tibiotarsus.

Comments.—*Zenaida aurita* is a medium-sized columbid that prefers disturbed or second-growth forests. It is found as well in or around clearings, mangroves, arid scrub, and cultivated regions. *Zenaida aurita* was the most common columbid in the vicinity of Trants in January 1983. This species seems to profit from human-caused habitat disturbances, as long as some trees and shrubs remain. *Zenaida aurita* has been recorded from archaeological and paleontological sites on Puerto Rico, Anguilla, Antigua, Barbuda, Martinique, and St. Eustatius (Wetmore, 1952; Brodkorb, 1971; Steadman et al., 1984*b*; Pregill et al., 1994; Maíz, 1996).

Geotrygon mystacea (Bridled Quail-dove)

Material.—Stratum A: unit N421/22E645—two sterna, five coracoids, scapula, two humeri, two ulnae, ulnare, carpometacarpus, femur, three tibiotarsi; unit N596E571—coracoid, scapula, two humeri. Stratum B: unit N396E571—three coracoids, scapula; unit N421/22E645—coracoid, femur, tarsometatarsus; unit N596E571—sternum, six coracoids, five scapulae, two humeri, two carpometacarpus, femur. Stratum C/D: unit N421/22E645—three coracoids, scapula, humerus, carpometacarpus, two femora, two tibiotarsi, four tarsometatarsi; unit N596E571—coracoid, scapula, femur.

Comments.—*Geotrygon mystacea* inhabits mature forests and woodlands. It is not found at Trants at present but occurred on forested slopes above the site in January 1983. Other prehistoric records of *G. mystacea* are from Antigua, Barbuda, and St. Eustatius (Pregill et al., 1994).

Columbidae sp.

Material.—Stratum A: unit N421/22E645—two carpometacarpi; unit N596E571—humerus, manus phalanx. Stratum B: unit N596E571—ulna, ulnare, two carpometacarpi. Stratum C/D: unit N421/22E645—four ulnae, two carpometacarpi.

Comments.—These bones are in the approximate size range of *Zenaida aurita* or *Geotrygon mystacea* but lack diagnostic features to identify them further.

Order Psittaciformes

Family Psittacidae

Amazona sp.

Material.—Stratum C/D: unit N421/22E645—humerus.

Comments.—This specimen, a humerus lacking the proximal end, is referred to *Amazona* rather than to the other West Indian genera of Psittacidae (*Ara*, *Aratinga*) by having these characters: fossa olecrani relatively shallow; condylus ventralis craniocaudally compressed; shaft more dorsoventrally expanded, especially in distal portion. Within *Amazona*, the humerus from Montserrat is much smaller than in any living Lesser Antillean species (Table 2). Instead it resembles, in size and qualitative features, the smaller species of *Amazona* that occur today in the Greater Antilles. The specimen from Montserrat is most similar overall to the humerus of *A. agilis* of Jamaica. The Puerto Rican Parrot, *A. vittata*, has been reported from prehistoric sites on Antigua (Pregill et al., 1994). A comprehensive understanding of the natural distribution and diversity of West Indian *Amazona* will require the discovery and study of bones from prehuman contexts on a variety of islands. Nevertheless, that small "Greater Antillean" forms of *Amazona* occur in prehistoric sites on Antigua and Montserrat suggests either that these parrots were being moved between islands prehistorically or that the small forms were indigenous to, but extirpated in, the Lesser Antilles.

Order Passeriformes

Family Mimidae

Mimids (mockingbirds and thrashers) dominate the passerine bone assemblage at Trants. Mimids are much larger than most other Lesser Antillean passerines. Our comparisons included skeletons of all larger passerines that occur on Mont-

Table 2.—Measurements (in mm) of the humerus of West Indian species of Amazona. The two five-digit catalogue numbers are UF. All six-digit catalogue numbers are USNM.

Specimen	UF/USNM cat. #	Sex	Location	Least width of shaft	Least depth of shaft	Distal width
Montserrat:						
specimen	—	?	Trants:	3.8		
<i>A. agilis</i>	559191	?	Stratum C/D	4.1	3.2	8.8
<i>A. collaria</i>	25803	♀	Jamaica	4.2	3.3	8.8
<i>A. vittata</i>	224002	?	Jamaica	4.2	3.6	9.5
<i>A. vittata</i>	573528	♀	Puerto Rico	4.3	3.6	8.9
<i>A. ventralis</i>	555753	♂	Puerto Rico	4.4	3.8	10.0
<i>A. ventralis</i>	555754	♂	Hispanola	4.4	3.8	9.7
<i>A. ventralis</i>	555755	♀	Hispanola	4.4	3.8	9.8
<i>A. leucocephala</i>	25796	♂	Hispanola	4.5	3.6	9.4
<i>A. versicolor</i>	487664	?	Cuba	4.5	3.8	9.7
<i>A. imperialis</i>	321883	?	St. Lucia	5.5	4.7	12.8
<i>A. imperialis</i>	318792	♀	Dominica	5.9	5.0	13.7
<i>A. arausiaca</i>	321882	?	Dominica	6.1	5.4	15.4
<i>A. arausiaca</i>	346187	?	Dominica	5.7	5.0	13.6
<i>A. guildingii</i>	613763	♀	Dominica	5.5	5.0	13.5
			St. Vincent	5.9	5.2	14.5

serrat or nearby islands (*Mimus gundlachii*, *Mimus polyglottos*, *Mimus gilvus*, *Margarops fuscus*, *Margarops fuscatus*, *Cinclocerthia ruficauda*, *Turdus* [*Mimocichla*] *plumbeus*, *Cichlherminia lherminieri*, and *Myadestes genibarbis*).

Margarops fuscus (Scaly-breasted Thrasher)

Material.—Stratum A: unit N596E571—mandible, scapula, two carpometacarpus, humerus. Stratum B: unit N596E571—quadrate, scapula, carpometacarpus, ulna, two humeri. Stratum C/D: unit N421/22E645—two ulnae, three tibiotarsi, nine humeri.

Comments.—In January 1983, *Margarops fuscus* was common in forests and occurred in lower numbers in semi-arid woodlands. Overall, *M. fuscus* was less abundant on Montserrat than *M. fuscatus*. It was not found at Trants but on nearby forested slopes. Other prehistoric records are from Barbuda (Pregill et al., 1994).

Margarops fuscatus (Pearly-eyed Thrasher)

Material.—Stratum A: unit N421/22E645—manus phalanx; unit N596E571—manus phalanx. Stratum B: unit N596E571—coracoid, two scapulae, three ulnae, carpometacarpus, two tibiotarsi, tarsometatarsus. Stratum C/D: unit N396E571—tarsometatarsus; unit N421/22E645—quadrate, mandible, two coracoids, two scapulae, three ulnae, carpometacarpus, manus phalanx, femur, eight tibiotarsi, two tarsometatarsi; unit N596E571—humerus, ulna, carpometacarpus.

Comments.—*Margarops fuscatus* is the largest West Indian species of Mimidae. It inhabits forested mountains to scrubby woodlands. In January 1983, *M. fuscatus* was common in the ghauts above Trants, although not in the immediate vicinity of the site. Other prehistoric records are from Anguilla, Antigua, Barbuda, and St. Eustatius (Pregill et al., 1994) and St. Martin (E. S. Wing, personal communication).

Cinclocerthia ruficauda (Brown Trembler)

Material.—Stratum B: unit N596E571—quadrate, mandible, two humeri. Stratum C/D: unit N421/22E645—tibiotarsus.

Comments.—*Cinclocerthia ruficauda* typically is found in rainforest but can occur locally in drier wooded habitats (Zusi, 1969). This species did not occur at Trants in January 1983 but was found in nearby montane forests. It was most common in the moist forests surrounding Chance Peak, which now have been destroyed by volcanic eruptions. *Cinclocerthia ruficauda* also has been recorded from archaeological and paleontological sites on Antigua, Barbuda, and St. Eustatius (Olson, 1982; Steadman et al., 1984b), the first two of these islands no longer supporting the species.

Family Turdidae (Muscicapidae)

Cichlherminia lherminieri (Forest Thrush)

Material.—Stratum A: unit N596E571—mandible. Stratum C/D: unit N421/22E571—three coracoids, carpometacarpus.

Comments.—*Cichlherminia lherminieri* is found in semi-arid to humid forests (Bond, 1956; Diamond, 1973). The form on Montserrat is an endemic subspecies, *C. lherminieri lawrencii*. In January 1983, this thrush did not occur in habitats near Trants but was found in the since-devastated moist forests below Chance

Peak and Galway's Soufrière. *Cichlherminia lherminieri* also has been recorded from paleontological sites in Barbuda where it no longer occurs (Pregill et al., 1994).

Mimidae or Turdidae, genus and species indeterminate

Material.—Stratum A: unit N396E571—coracoid. Stratum B: unit N596E571—coracoid, carpometacarpus, two femora. Stratum C/D: unit N421/22E645—two coracoids, humerus, femur.

Comments.—These fragmentary bones lack diagnostic features to identify them further.

Family Icteridae

Icterus cf. *I. oberi* (Montserrat Oriole)

Material.—Stratum B: unit N596E571—humerus, tarsometatarsus.

Comments.—These specimens are referred to *Icterus* rather than other similarly sized genera of Icteridae (*Molothrus*, *Dolichonyx*) by the larger and more distinctly partitioned fossae pneumotricipitalis and the relatively broad but shallow fossa musculo brachialis (humerus), as well as the unique shape, size, and juxtaposition of the three trochleae (tarsometatarsus). Skeletons of *Icterus oberi* were not available, but the two specimens from Trants closely resemble specimens of the similarly sized *I. dominicensis* from Hispanola and Puerto Rico. These two species are larger than the two migrant species of orioles (*I. galbula*, *I. spurius*) that potentially might occur on Montserrat.

Icterus oberi was rare on Montserrat in January 1983. Steadman's only records of this endemic species were 1 km north of Salem Village at mature forest edge (elevation ca. 300 m) on 26 January 1983, and at mature forest edge (ca. 400 m) on the southwest slope (Upper Galway's Estate) of Chance Peak (an area now deforested by volcanic eruptions) on 28 January 1983. Known locally as the "Rainbird," *I. oberi* is the national bird of Montserrat and the island's only endemic species of bird. Wauer (1996) failed to find *I. oberi* during several days of birdwatching in February 1988, but did see the bird on another trip in May 1989, just before Montserrat's forests were damaged by Hurricane Hugo in September 1989. *Icterus oberi* still survived in 1994 (Arendt, 1994).

Passeriformes sp., family and species indeterminate

Material.—Stratum A: unit N421/22E645—coracoid, carpometacarpus; unit N596E571—carpometacarpus. Stratum B: unit N396E571—carpometacarpus; unit N596E571—coracoid, ulna, carpometacarpus, manus phalanx. Stratum C/D: unit 421/22E645—sternum, scapula, two tibiotarsi; unit N596E571—scapula, manus phalanx.

Comments.—These fragmentary bones lack diagnostic features to identify them further.

DISCUSSION

Precisely identified bones from prehistoric sites on tropical islands yield data that can be used to elucidate the related topics of long-term changes in habitat, human impact on the fauna, and human subsistence patterns (Pregill and Olson, 1981; Steadman et al., 1984b; Rea, 1986; Steadman, 1995). Our new data on

birds from the Trants site are pertinent to each of these issues. Knowledge of these topics varies considerably between West Indian islands because of the intensity and quality of the research done thus far, as well as the timing and intensity of human occupation. Some islands, such as Grand Cayman, have no evidence at all of prehistoric occupation (Stokes and Keegan, 1996), whereas others, such as Antigua, have a long and relatively well-studied prehistoric record (see review in Pregill et al., 1994).

Human impact on island ecosystems typically is implemented through habitat degradation, introduction of predators, and direct predation by humans. We can assess this on Montserrat by comparing the distribution and abundance of prehistoric and modern faunas. *Columba squamosa*, *Geotrygon mystacea*, *Margarops fuscatus*, and *M. fuscus* were the most abundant species excavated from Trants in both 1979 and 1990 (Table 1). Along with *Cinlocerthia ruficauda* and *Cichlherminia lherminieri*, these six species occurred only in forested habitats on Montserrat in January 1983. This suggests either that the prehistoric habitat in the vicinity of Trants was more forested during Saladoid occupation of the island or that the Saladoid peoples preferred to hunt birds in forests, regardless of how far away these forests were from their settlement.

Zenaida aurita was common at Trants in January 1983 but was outnumbered in the bone assemblages by the two forest-dwelling columbids. *Zenaida aurita* prefers open habitats and clearings and thrives in places of high disturbance. That this species was common at Trants until the recent volcanic eruption but relatively uncommon in the bone assemblages adds further support to the notion that the Trants region was more forested when the site was occupied.

Two nonforest species of birds have been extirpated on Montserrat—the shearwater *Puffinus lherminieri*, and gallinule *Porphyrio martinicus*. The shearwater probably has been lost to predation in its nesting burrows by Saladoid peoples and introduced mammalian predators. Island populations of *Porphyrio martinicus* are vulnerable to habitat loss and predation from humans and introduced mammals (Steadman et al., 1984a). We should stress here that we do not know the precise time at which any of these species were lost on Montserrat.

The bones of procellariids, rallids, and columbids in Lesser Antillean cultural sites suggests that the Saladoid peoples used these species as food items. Birds from these same three families often make up most of species found in prehistoric sites in the tropical Pacific as well (Steadman, 1995). Shearwaters, rails, and pigeons furnished fat and protein for island peoples whose crops provided mostly carbohydrates. The presence at Trants as well of so many large passerines implies that these birds were also used as food, not surprising given that thrashers and thrushes are at least partially frugivorous and therefore have very tasty meat. The apparent absence of small passerines in the Trants faunal samples could be genuine, or perhaps is due to a preservational bias, or to the use of ¼-in mesh (in three of four quadrants in each excavation unit) rather than the ⅛-in mesh that would retain the smaller bones.

Six of the 11 species reported here were represented in the 95 bird bones from Trants reported by Steadman et al. (1984b). The five additional species (*Puffinus lherminieri*, *Porphyrio martinicus*, *Amazona* sp., *Cichlherminia lherminieri*, and *Icterus oberi*) were all recorded from either Stratum C/D of units N396E571 and N421/22E645 (near the 1979 excavation unit) or from unit N596E571 (located ca. 200 m north of the 1979 excavation unit). Excavations in 1990 reached greater depths (100–110 cm) than those in 1979 (80 cm). Radiocarbon dates from Stratum

C/D of the 1990 units indicate that this deposition occurred between ca. 500 BC and AD 400, which corresponds to the entire Saladoid occupation of Trants (Watters, 1994; Petersen, 1996). Therefore, species recovered in these units may represent a more complete sample of vertebrates used by the Saladoid people during their ca. 900-year occupation of Montserrat. Radiocarbon dates for Stratum C/D of the 1979 unit indicate that the first three centuries of Saladoid occupation are not represented in this unit (Watters, 1994). Steadman et al. (1984b) recorded two species (*Gallinula chloropus* and *Columbina passerina*) that were not found in the bone assemblage from 1990. The scarcity of *C. passerina* may be habitat related, as this species prefers fragmented or scrubby habitats rather than the large tracts of forest that may have occurred on Montserrat during the time of initial Saladoid occupation.

Finally, the bones from Trants provide a glimpse of past bird life on an island that is facing potential Krakatau-like biotic destruction from volcanic activity (see Thornton, 1995). If Montserrat's birdlife is lost in the current volcanic event, the study of recolonization will be more strongly rooted than on Krakatau in a knowledge of what lived there long before the devastation. Several thousand of Montserrat's only endemic species of bird, *Icterus oberi*, still survived in December 1997 (Atkinson and Gibbons, 1998). Should the volcanic activity continue and the oriole become critically endangered, an effort should be considered to capture individuals for captive breeding, thereby possibly preventing its extinction. This would be beneficial not just for the sake of the oriole, but also for the Montserratians, who are disheartened, displaced, and might take some consolation in knowing that their beloved "Rainbird" may return one day to the Emerald Isle.

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